



## 9.10 Town of Dover

This section presents the jurisdictional annex for the Town of Dover.

### 9.10.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Name: William Gilbert Address: 37 N. Sussex Street Phone: (973) 366-0302 E-mail: doveroem@dover.nj.us	None at this time

### 9.10.2 Municipal Profile

The Town of Dover is located in the central region of Morris County; it is bordered by the Township of Rockaway to the north and east, Randolph and Victory Gardens to the south, and Mine Hill and Wharton to the west. Major waterways in the Town include, the Rockaway River and Jackson Brook. According to the U.S. Census, the 2010 population for the Town was 18,517, and the total area is 2.73 square miles, 2.68 square miles of land and 0.05 square miles of water. There are no unincorporated communities in the Town.

The Town is also located in the New Jersey Highlands Region, one of the 88 municipalities protected by and subject to the provisions of the Highlands Water Protection and Planning Act. Nearly the entire Town is located within the Highlands Planning Area (1,746 acres or 99.9%).

### Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in section 9.10.9 of this annex which illustrates the hazard areas along with the location of potential new development.

**Table 9.10-1. Growth and Development**

Property or Development Name	Type (e.g., Res., Comm.)	# of Units/Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
<b>Recent Development from 2010 to present</b>					
Hilton Homewood Suites	Commercial	1 Structure	2 Commerce Center Dr./Block 901, Lot 1.05	None	108 Room Hotel. C.O. issued 10/06/09
<b>Known or Anticipated Development in the Next Five Years</b>					
Marriot Townplace Suites	Commercial	1 Structure	4 Commerce Center Dr./Block 901, Lot 1.06		4 Story, 102 Room Hotel Under Construction. Expect Completion Summer 2015



Property or Development Name	Type (e.g., Res., Comm.)	# of Units/Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
Commerce Dr. Office Bldg	Commercial	1 Structure	6 Commerce Center Dr./Block 901, Lot 1.04	None	3 Story 29,742 SF Office Building. Planning Board Approval, No Building Permits, Possible by 2020
Meridia Transit Plaza	Mixed use	375 DU 2,500 SF Retail	S. Sussex St.		Approved Redevelopment Plan, Site Plan Approval 5/15, Construction 7/15
Meridia Gateway	Residential	375 DU	200 E. Blackwell St.	Flood: 1% Chance; NEHRP: D	Approved Redevelopment Plan, Site Plan Approval 5/15, Construction 7/16
Dickerson South Redevelopment	Residential	200 Units	S. Morris St./Parking Lot "B"		In Negotiations. Construction 7/17

\* Only location-specific hazard zones or vulnerabilities identified.

### 9.10.3 Natural Hazard Event History Specific to the Municipality

Morris County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

**Table 9.10-2. Hazard Event History**

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
March 12 – April 15, 2010	Severe Storms and Flooding	DR-1897	Yes	Roadways closed
August 26 – September 5, 2011	Hurricane Irene	EM-3332 DR-4021	Yes	Roadways closed; Power outages
October 29, 2011	Severe Storm	DR-4048	Yes	Roadways closed; Power outages
October 26 – November 8, 2012	Hurricane Sandy	EM-3354 DR-4086	Yes	Roadways closed; Power outages

### 9.10.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Town of Dover. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

#### Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Town of Dover.



**Table 9.10-3. Hazard Risk/Vulnerability Risk Ranking**

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a, c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Rare	6	Low
Earthquake	500-year MRP: \$3,366,802 2,500-year MRP: \$54,535,966	Occasional	32	High
Extreme Temperature	Damage estimate not available	Frequent	27	Medium
Flood	1% Annual Chance: \$34,416,844	Frequent	27	Medium
Geological Hazards	Exposed to Class A and Class B: \$7,494,276	Frequent	18	Medium
Severe Storm	100-Year MRP: \$1,594,397 500-year MRP: \$9,894,548 Annualized: \$92,897	Frequent	48	High
Winter Storm	1% GBS: \$30,757,453 5% GBS: \$153,787,266	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$15,947,619	Rare	6	Low
Disease Outbreak	Damage estimate not available	Frequent	36	High
Hazardous Materials	Damage estimate not available	Frequent	36	High
Infestation	Damage estimate not available	Frequent	18	Medium

Notes:

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- The valuation of general building stock and loss estimates was based on custom inventory for the municipality.  
High = Total hazard priority risk ranking score of 31 and above  
Medium = Total hazard priority risk ranking of 20-30+  
Low = Total hazard risk ranking below 20
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood and earthquake hazards represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.

### National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Dover.

**Table 9.10-4. NFIP Summary**

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Town of Dover	248	490	\$6,704,215.99	23	16	193

Source: FEMA Region 2, 2014

- Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 9/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.
  - Total building and content losses from the claims file provided by FEMA Region 2.
  - The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.
- Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.  
A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.  
Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.



### Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1-and 0.2-percent annual chance flood events.

**Table 9.10-5. Potential Flood Losses to Critical Facilities**

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent <sup>(1)</sup>
Dover Fire Department	Fire	X	X	-	-	-
Dover Police Department	Police	X	X	-	-	-
Lakeland Bus Lines	Bus Facility	X	X	-	-	-
Regency Grande Nursing & Rehab Center	Senior	X	X	0	0	-
Sacred Heart School	School	X	X	6.87	37.3	480
Town of Dover Municipal Building	EOC	X	X	-	-	-
Town of Dover Municipal Building	Municipal Hall	X	X	-	-	-
Town of Dover Public Library	Library	X	X	-	-	-

Source: HAZUS-MH 2.1

Note (1): HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1

### Other Vulnerabilities Identified

The Rockaway River flows through the Town of Dover in a broad channel with varying banks. Tributaries within the area are intermittent and flow in narrow channels. Flooding in the Town is typically the result of heavy rainfall produced by hurricanes moving up the coast, large frontal storms from the west and south, and local thunderstorms (FEMA FIS 2010).



### 9.10.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

#### Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Town of Dover.

**Table 9.10-6. Planning and Regulatory Tools**

Tool/Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept./Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
<b>Planning Capability</b>				
Master Plan	Yes January 2007	Local	Planning	Town of Dover Adopted by Planning Board
Capital Improvements Plan	Yes	Local	Administration	
Floodplain Management/Basin Plan	Yes	Local	Construction	Dover Code Chapter 236, Article VI
Stormwater Management Plan	Yes April 2005			
Open Space Plan	Yes	Local	Planning	Town of Dover Adopted by Planning Board
Stream Corridor Management Plan	No			
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	No			
Emergency Response Plan	No			
Post-Disaster Recovery Plan	No			
Transportation Plan	Yes	Local	Planning	Town of Dover Adopted by Planning Board
Strategic Recovery Planning Report	No			
Other Plans:	Yes April 2005	Local		April 2005-North Sussex Street Landfill Redevelopment June 2006-Bassett Highway Redevelopment Plan
<b>Regulatory Capability</b>				
Building Code	Yes	State & Local		State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	Yes	Local	Planning	Dover Code Chapter 236, Article IV



Tool/Program (code, ordinance, plan)	Do you have this? (Yes/No)	Authority (local, county, state, federal)	Dept./Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Subdivision Ordinance	Yes	Local	Planning	Dover Code Chapter 236, Article VI
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local		
NFIP: Cumulative Substantial Damages	No			
NFIP: Freeboard	Yes	State, Local		
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes	Local	Planning	Dover Code Chapter 236, Article VI
Stormwater Management Ordinance	Yes	Local	Planning	Dover Code Chapter 236, Article VB
Municipal Separate Storm Sewer System (MS4)	Yes	State; Local	Public Works	Town of Dover Adopted by Planning Board
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	Yes	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes	Local		Dover Code Chapter 265, Article I

### Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Town of Dover.

**Table 9.10-7. Administrative and Technical Capabilities**

Resources	Is this in place? (Yes or No)	Department/Agency/Position
<b>Administrative Capability</b>		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	
Environmental Board/Commission	No	
Open Space Board/Committee	No	
Economic Development Commission/Committee	Yes	Committee of the Mayor & Board of Aldermen
Maintenance Programs to Reduce Risk	No	
Mutual Aid Agreements	Yes	Fire
<b>Technical/Staffing Capability</b>		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Engineering & Planning
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Engineering & Construction
Planners or engineers with an understanding of natural hazards	Yes	Engineering
NFIP Floodplain Administrator	Yes	Construction Official
Surveyor(s)	No	



Resources	Is this in place? (Yes or No)	Department/Agency/Position
Personnel skilled or trained in GIS and/or Hazus-MH applications	No	
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	Office of OEM
Grant Writer(s)	No	
Staff with expertise or training in benefit/cost analysis	No	
Professionals trained in conducting damage assessments	No	

### Fiscal Capability

The table below summarizes financial resources available to the Town of Dover.

**Table 9.10-8. Fiscal Capabilities**

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community development Block Grants (CDBG, CDBG-DR)	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No
Incur debt through general obligation bonds	No
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	Yes
Open Space Acquisition Funding Programs	Yes-Morris County Flood Mitigation Program (acquisitions)
Other	

### Community Classifications

The table below summarizes classifications for community program available to the Town of Dover.

**Table 9.10-9. Community Classifications**

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No		
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (ISO Fire Protection Classes 1 to 10)	No		
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	No		



Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	No		
Public-Private Partnerships	No		

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

### Self-Assessment of Capability

The table below provides an approximate measure of Dover's capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

**Table 9.10-10. Self-Assessment Capability for the Municipality**

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)	Moderate	High
Planning and Regulatory Capability		X	
Administrative and Technical Capability		X	
Fiscal Capability	X		
Community Political Capability		X	
Community Resiliency Capability		X	
Capability to Integrate Mitigation into Municipal Processes and Activities.	X		





## National Flood Insurance Program

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### NFIP Floodplain Administrator

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Richard Sodano – Construction Official

### Flood Vulnerability Summary

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A formal list of flood-damaged properties and property owner's interest in pursuing mitigation is not maintained by the Town. Currently, the Town does not make Substantial Damage estimates for emergency and storm events.

### Resources

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The NFIP FPA is the sole person responsible for floodplain administration in the Town. The NFIP administration services provided by the FPA include permit review and permit inspection. Currently, the Town does not provide education or outreach to the community regarding flood hazard and risk and flood risk reduction through NFIP insurance or mitigation. The FPA cited a lack of funding as a barrier to running an effective floodplain management program in the Town. To gain a better understanding on the responsibilities of the position, the FPA would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for all local FPAs.

### Compliance History

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The Town is currently in good-standing in the NFIP.

### Regulatory

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The Town's floodplain management regulations and ordinances meet the requirements of FEMA and the State. The Town of Dover does not participate in the Community Rating System (CRS) program. If it were offered locally, the Town would consider attending a CRS seminar to learn about joining the program.

## Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

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For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

### Planning

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The 2007 Master Plan provides many goals and initiatives pertaining to hazard mitigation and environmentally sensitive lands. The Plan proposes to identify environmentally sensitive land, preserve and enhance open space and to reduce auto-dependency through innovative design practices that encourage and allow for pedestrian activity. The Town will work towards mapping all wetland, floodplain, steep slopes and other known environmentally constrained land and developing a flood mitigation plan.

The 2005 Stormwater Management Plan was adopted as a means to reduce the impacts on public health and the infrastructure by flooding caused by stormwater runoff, as well as increased soil erosion and nonpoint source pollution. Mitigation actions include changes to existing ordinances and adoption of new ordinances, including a flood damage prevention ordinance. If a new development cannot provide satisfactory stormwater



management on site, a mitigation project can be implemented by the developer within the same drainage area; these projects must be either a retrofit of an existing outfall, improving the quality of existing stormwater runoff or stabilizing stream banks.

### Regulatory and Enforcement

The Township has multiple ordinances pertaining to the mitigation of hazards. These ordinances include the NFIP Flood Damage Prevention Ordinance, a stormwater management ordinance and fire prevention ordinances.

### Operational and Administration

Dover has mutual aid agreements that allow surrounding communities to provide and receive additional support during an emergency event.

### Fiscal

The Town has access to Community Development Block Grants, as well as local capital improvements funding to fund mitigation actions and initiatives.

### Education and Outreach

The Office of Emergency Management provides the community on information regarding preparing for and the recovery of an emergency event. Residents can sign up for emergency notifications from the Everbridge notification system, as well as MCUrgent, which is a multi-jurisdictional emergency notification system run by Morris County.

## 9.10.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

### Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.



Table 9.10-11. Past Mitigation Initiative Status

<b>2010 Mitigation Action</b>	<b>Lead</b>	<b>Status (In progress, No progress, Complete)</b>	<b>Describe Status</b> 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	<b>Next Step (Include in 2015 HMP, Discontinue)</b>	<b>Describe Next Step</b> 1. If including action in 2015 HMP, revise/reword to be more specific (as appropriate). 2. If discontinuing, explain why.
<b>Dover 1:</b> Acquisition of eight repetitive loss properties along the Rockaway river.	Town Administrator	No Progress	0% complete No action taken thus far. Obstacles are the acquisition process and funding. Town does not have the money to acquire these properties.	Include in 2015 HMP	This action has not been completed due to the acquisition process and funding. This action will be included in the 2015 HMP Update.
<b>Dover 2:</b> Town Water Works facility bridge to access the wells and administrative structures needs to be replaced (town is close to securing necessary permits).	Director of Public Works	No Progress	0% complete Town currently does not have funding to replace bridge at this time.	Include in 2015 HMP	This action has not been completed due to lack of funding to replace the bridge. This action will be included in the 2015 HMP Update.
<b>Dover 3:</b> Town Hall needs a new backup power (generator) and new wiring.	Town Administrator	In Progress	Funding has been secured and this action has been started but not yet completed. Estimated completion is end of 2015	Include in 2015 HMP	Funding has been secured to purchase and install the generator; however, this project has not been completed. This action will be included in the 2015 HMP Update.
<b>Dover 4:</b> Emergency shelter at Dover High school needs a backup power (generator).	School Superintendent	In Progress	This action item has been investigated but deemed not viable to do due to cost.	Include in 2015 HMP	This action has been investigated; however, it was deemed not viable due to the cost. This action will be included in the 2015 HMP Update.
<b>Dover 5:</b> Acquisition/elevation of eight repetitive loss properties along East Blackwell Street.	Town Administrator	No Progress	0% complete No action taken thus far. Obstacles are the acquisition process and funding. Town does not have the money to acquire these properties.	Include in 2015 HMP	This action has not been completed due to the acquisition process and funding. This action will be included in the 2015 HMP Update.
<b>Dover 6:</b> Elevation/acquisition of two repetitive loss properties on Hudson Street.	Town Administrator	No Progress	0% complete No action taken thus far. Obstacles are the acquisition process and funding. Town does not have the money to acquire these properties.	Include in 2015 HMP	This action has not been completed due to the acquisition process and funding. This action will be included in the 2015 HMP Update.
<b>Dover 7:</b> Elevation/acquisition of three Repetitive Loss properties on Richards Avenue.	Town Administrator	No Progress	0% complete No action taken thus far. Obstacles are the acquisition process and funding. Town does not have the money to acquire these properties.	Include in 2015 HMP	This action has not been completed due to the acquisition process and funding. This action will be included in the 2015 HMP Update.
<b>Dover 8:</b> Develop all-hazards public education and outreach program for hazard mitigation and preparedness	Local and County OEM	In Progress	This task has not yet been completed due to change in local OEM personnel	Include in 2015 HMP	Due to personnel change at the local OEM level, this project has not been completed. This action will be included in the 2015 HMP Update.



### Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The municipality has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2010 Plan:

- The Town has not completed any additional mitigations projects or activities.

### Proposed Hazard Mitigation Initiatives for the Plan Update

The Town of Dover participated in a mitigation action workshop in January 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 'Selecting Appropriate Mitigation Measures for Floodprone Structures' (March 2007) and FEMA 'Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards' (January 2013).

Table 9.10-12 summarizes the comprehensive-range of specific mitigation initiatives the Town of Dover would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, fourteen evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as 'High,' 'Medium,' or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.10-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.10-111. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
DT-1 (Old Dover 1)	Acquisition of eight repetitive loss properties along the Rockaway river.	Existing	Flood	G-4	Town Administrator	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
DT-2 (Old Dover 2)	Town Water Works facility bridge to access the wells and administrative structures needs to be replaced (town is close to securing necessary permits).	Existing	All-Hazard	G-4	Director of Public Works	High	High	FEMA; Municipal Budget	Short	Medium	SIP	PP
DT-3 (Old Dover 3)	Town Hall needs a new backup power (generator) and new wiring.	Existing	All-Hazard	G-4	Town Administrator	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
DT-4 (Old Dover 4)	Emergency shelter at Dover High school needs a backup power (generator).	Existing	All-Hazard	G-4	School Superintendent	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
DT-5 (Old Dover 5)	Acquisition/elevation of eight repetitive loss properties along East Blackwell Street.	Existing	Flood	G-4	Town Administrator	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
DT-6 (Old Dover 6)	Elevation/acquisition of two repetitive loss properties on Hudson Street.	Existing	Flood	G-4	Town Administrator	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
DT-7 (Old Dover 7)	Elevation/acquisition of three Repetitive Loss properties on Richards Avenue.	Existing	Flood	G-4	Town Administrator	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
DT-8 (Old Dover 8)	Develop all-hazards public education and outreach program for hazard mitigation and preparedness	New	All-Hazard	G-1	Town Administrator	High	Medium	FEMA; Municipal Budget	Short	Medium	EAP	PI
DT-9	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All-Hazard	G-2, G-3	County and Municipal OEM	Medium	Low	Municipal Budget	Short	Medium	EAP	ES

Notes:

Not all acronyms and abbreviations defined below are included in the table.

\*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.



Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
NJDEP	New Jersey Department of Environmental Protection
NJOEM	New Jersey Office of Emergency Management
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued 2015)

Timeline:

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High	Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP)-These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:

- Preventative Measures (PR)-Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- Property Protection (PP)-These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.





- *Public Information (PI)*-Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- *Natural Resource Protection (NR)*-Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- *Structural Flood Control Projects (SP)*-Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)*-Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 9.10-12. Summary of Prioritization Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High/Medium/Low
DT-1 (Old Dover 1)	Acquisition of eight repetitive loss properties along the Rockaway river.	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
DT-2 (Old Dover 2)	Town Water Works facility bridge to access the wells and administrative structures needs to be replaced (town is close to securing necessary permits).	0	1	0	1	0	0	0	0	0	1	1	1	0	0	5	Low
DT-3 (Old Dover 3)	Town Hall needs a new backup power (generator) and new wiring.	1	1	1	1	0	1	0	1	1	0	1	1	0	0	9	Medium
DT-4 (Old Dover 4)	Emergency shelter at Dover High school needs a backup power (generator).	1	1	1	1	0	1	0	1	1	0	1	1	0	0	9	Medium
DT-5 (Old Dover 5)	Acquisition/elevation of eight repetitive loss properties along East Blackwell Street.	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
DT-6 (Old Dover 6)	Elevation/acquisition of two repetitive loss properties on Hudson Street.	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
DT-7 (Old Dover 7)	Elevation/acquisition of three Repetitive Loss properties on Richards Avenue.	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
DT-8 (Old Dover 8)	Develop all-hazards public education and outreach program for hazard mitigation and preparedness	1	1	1	1	0	1	1	1	1	1	1	1	0	0	11	High
DT-9	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	1	1	1	1	0	0	1	0	0	1	1	1	0	1	9	Medium

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.





### **9.10.7 Future Needs To Better Understand Risk/Vulnerability**

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None at this time.

### **9.10.8 Hazard Area Extent and Location**

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Hazard area extent and location maps have been generated for the Town of Dover that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Dover has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

### **9.10.9 Additional Comments**

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None at this time.



Figure 9.10-1. Town of Dover Hazard Area Extent and Location Map 1

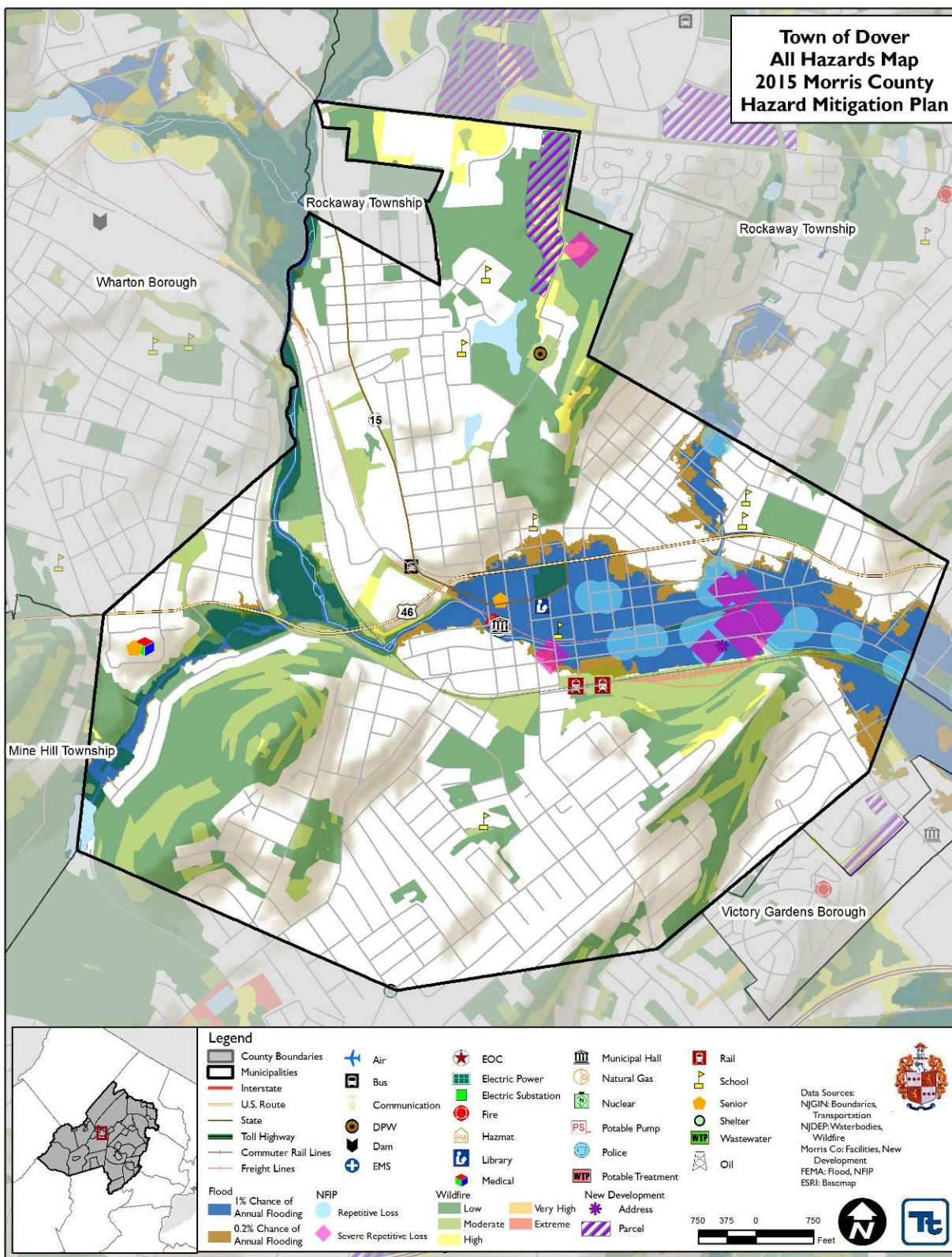
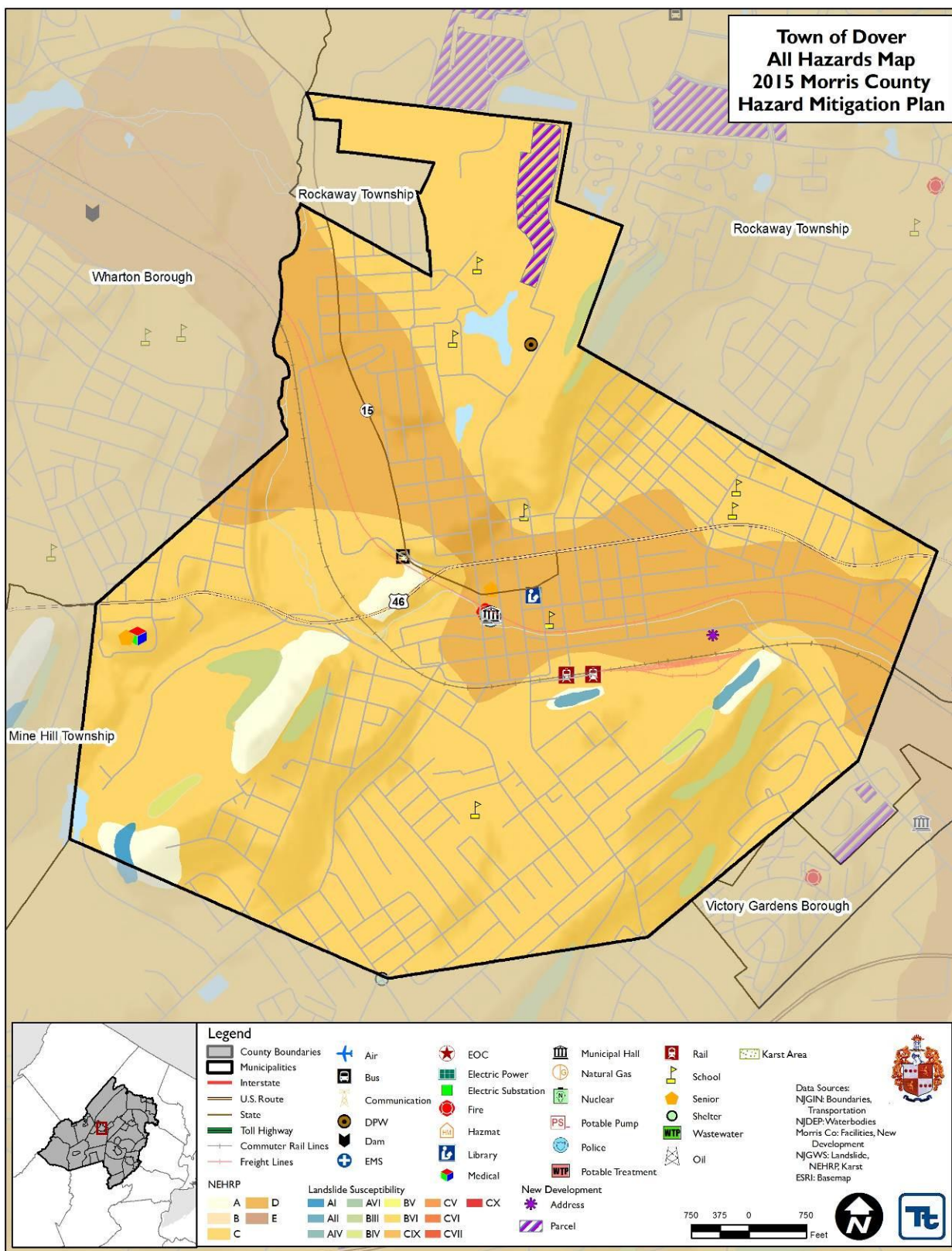






Figure 9.10-2. Town of Dover Hazard Area Extent and Location Map 2





Action Number:

DT-1

Mitigation Action/Initiative:

Acquisition of eight repetitive loss properties along the Rockaway River

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding, Severe Storm, Severe Winter Storm
<b>Specific problem being mitigated:</b>	Flooding along the Rockaway River has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Acquire eight repetitive loss properties along the Rockaway River
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The Town is looking to purchase these properties in order to reduce the damages and losses associated with flooding in this area. The properties could be used for further mitigation actions and strategies.
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	G-4
<b>Applies to existing, future, or not applicable</b>	Existing structure
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Town Administrator
<b>Local Planning Mechanism</b>	TBD
<b>Potential Funding Sources</b>	FEMA, Municipal Budget
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 7/1/2015 Progress on Action/Project: Continue to pursue action



Action Number:

DT-1

Mitigation Action/Initiative:

Acquisition of eight repetitive loss properties along the Rockaway River

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from flooded homes
Property Protection	1	Remove residents from floodprone areas
Cost-Effectiveness	1	Reduce the risk and costs of flooded properties
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	Medium	



Action Number: DT-3  
Mitigation Action/Initiative: Backup Generator for Town Hall

Assessing the Risk	
Hazard(s) addressed:	Severe Storm, Severe Winter Storm, Earthquake
Specific problem being mitigated:	High winds and winter storms have the potential to cause widespread loss of electrical power to buildings throughout the Town. The Town Hall is a critical facility and remaining opening during emergency events is important for response and recovery.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Purchase and install generator for town hall
	2. Purchase portable generators
	3. Do nothing – current problem continues
Action/Project Intended for Implementation	
Description of Selected Action/Project	The generator will allow the Town Hall to remain open during emergency events and effectively respond to problems throughout the Town and begin recovery.
Action/Project Category	SIP
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing structure
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	High
Plan for Implementation	
Responsible Organization	Town Administrator
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short Term
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/1/2015 Progress on Action/Project: Continue to pursue action



Action Number:

DT-3

Mitigation Action/Initiative:

Backup Generator for Town Hall

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Allow for operations to continue during power failures
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	All that cause power outages
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	Medium	



Action Number: DT-4

Mitigation Action/Initiative: Backup Generator for Emergency Shelter at Dover High School

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Severe Storm, Severe Winter Storm, Earthquake
<b>Specific problem being mitigated:</b>	High winds and winter storms have the potential to cause widespread loss of electrical power to buildings throughout the Town. The emergency shelter is a critical facility and remaining opening during emergency events is important for response and recovery.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Purchase and install generator for high school
	2. Purchase portable generators
	3. Do nothing – current problem continues
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The generator will allow the shelter remain functional to effectively aid residents that have been evacuated from their homes or have lost power.
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	G-4
<b>Applies to existing, future, or not applicable</b>	Existing structure
<b>Benefits (losses avoided)</b>	It is important for an emergency shelter to maintain functionality throughout an emergency event to provide a safe location for residents that have displaced from their homes.
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	School Superintendent
<b>Local Planning Mechanism</b>	TBD
<b>Potential Funding Sources</b>	FEMA, Municipal Budget
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 7/1/2015 Progress on Action/Project: Continue to pursue action





Action Number:

DT-4

Mitigation Action/Initiative:

Backup Generator for Emergency Shelter at Dover High School

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Provide a shelter for residents during emergencies
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	All
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	Medium	



Action Number:

DT-5

Mitigation Action/Initiative:

Acquisition and elevation of eight repetitive loss properties along East Blackwell Street

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding, Severe Storm, Severe Winter Storm
<b>Specific problem being mitigated:</b>	Flooding along East Blackwell Street has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Acquire or elevate eight repetitive loss properties along East Blackwell Street
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The Town is looking to purchase these properties in order to reduce the damages and losses associated with flooding in this area. The properties could be used for further mitigation actions and strategies.
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	G-4
<b>Applies to existing, future, or not applicable</b>	Existing structure
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Town Administrator
<b>Local Planning Mechanism</b>	TBD
<b>Potential Funding Sources</b>	FEMA, Municipal Budget
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 7/1/2015 Progress on Action/Project: Continue to pursue action



**Action Number:**

DT-5

**Mitigation Action/Initiative:**

Acquisition and elevation of eight repetitive loss properties along East Blackwell Street

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from flooded homes
Property Protection	1	Remove residents from floodprone areas
Cost-Effectiveness	1	Reduce the risk and costs of flooded properties
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	Medium	



<b>Action Number:</b>	DT-6
<b>Mitigation Action/Initiative:</b>	Acquisition and elevation of two repetitive loss properties along Hudson Street

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding, Severe Storm, Severe Winter Storm
<b>Specific problem being mitigated:</b>	Flooding along Hudson Street has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Acquire or elevate two repetitive loss properties along Hudson Street
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The Town is looking to purchase these properties in order to reduce the damages and losses associated with flooding in this area. The properties could be used for further mitigation actions and strategies.
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	G-4
<b>Applies to existing, future, or not applicable</b>	Existing structure
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Town Administrator
<b>Local Planning Mechanism</b>	TBD
<b>Potential Funding Sources</b>	FEMA, Municipal Budget
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 7/1/2015 Progress on Action/Project: Continue to pursue action



**Action Number:**

DT-6

**Mitigation Action/Initiative:**

Acquisition and elevation of two repetitive loss properties along Hudson Street

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from flooded homes
Property Protection	1	Remove residents from floodprone areas
Cost-Effectiveness	1	Reduce the risk and costs of flooded properties
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	Medium	

**Action Number:** DT-7**Mitigation Action/Initiative:** Acquisition and elevation of three repetitive loss properties along Richards Ave

Assessing the Risk	
<b>Hazard(s) addressed:</b>	Flooding, Severe Storm, Severe Winter Storm
<b>Specific problem being mitigated:</b>	Flooding along Richards Ave has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
<b>Actions/Projects Considered (name of project and reason for not selecting):</b>	1. Acquire or elevate three repetitive loss properties along Richards Ave.
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
<b>Description of Selected Action/Project</b>	The Town is looking to purchase these properties in order to reduce the damages and losses associated with flooding in this area. The properties could be used for further mitigation actions and strategies.
<b>Action/Project Category</b>	SIP
<b>Goals/Objectives Met</b>	G-4
<b>Applies to existing, future, or not applicable</b>	Existing structure
<b>Benefits (losses avoided)</b>	High
<b>Estimated Cost</b>	High
<b>Priority*</b>	High
Plan for Implementation	
<b>Responsible Organization</b>	Town Administrator
<b>Local Planning Mechanism</b>	TBD
<b>Potential Funding Sources</b>	FEMA, Municipal Budget
<b>Timeline for Completion</b>	Short Term
Reporting on Progress	
<b>Date of Status Report/ Report of Progress</b>	Date: 7/1/2015 Progress on Action/Project: Continue to pursue action



**Action Number:**

DT-7

**Mitigation Action/Initiative:**

Acquisition and elevation of three repetitive loss properties along Richards Ave

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protect residents from flooded homes
Property Protection	1	Remove residents from floodprone areas
Cost-Effectiveness	1	Reduce the risk and costs of flooded properties
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	1	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	Medium	